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ABSTRACT

The Maryland Longitudinal Study (MLS) participants and non-participants are compared on several pre-enrollment and University of Maryland College Park (UMCP) academic/enrollment history variables. The purpose is to assess how confidently generalizations can be made to the larger student body from the student studies as part of MLS. Two basic questions were addressed: (1) were there any significant differences between the MLS representative and black groups and their comparison groups on specified pre-enrollment characteristics (gender, race, Scholastic Aptitude Test scores, and entering academic division) and (2) were there significant differences between the MLS representative and black groups and their comparison groups on collegiate academic and enrollment variables (i.e. number of official changes in declared major, number of times placed on academic probation, and date of graduation from UMCP)? No significant differences were found between MLS black group participants and non-participants in regard to question 1 (though there was a decreased number of Asian students in the representative group). In reference to question 2, a significantly greater percentage of MLS representative group participants than non-participants had been placed on academic probation one or more times, and 48% of the MLS representative group had graduated from UMCP 5 years following their matriculation. The difference in graduation rates between the groups suggests that MLS participants present a slightly positively biased picture of their college experience than would be true of the entire college population. Tables are included. (SM)

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MLS RESEARCH HIGHLIGHTS

Maryland Longitudinal Study

RESEARCH REPORT #11

COMPARING MLS PARTICIPANTS AND NON-PARTICIPANTS

EXECUTIVE SUMMARY

The focus of this report is the comparison of MLS **participants** and **non-participants** on several pre-enrollment and UMCP academic/enrollment history variables. The purpose is to assess how confidently generalizations can be made to the larger student body from the students studied as part of MLS. The choice of variables for this comparison was limited to those for which data were available for non-participating students. For example, were the SAT scores, GPA's, academic actions (e.g., number of times on probation or dismissed) of the students who participated in MLS typical of incoming UMCP students? The MLS Representative Group's "comparison group" consisted of a random sample of 199 first-time freshmen matriculating in Fall, 1981 (the year following the initiation of MLS). The MLS Black Group's "comparison group" consisted of *all* black freshmen matriculating in the same year (Fall, 1981).

Two basic questions are addressed. The first concerns the **representativeness** of the MLS Representative and Black Groups (as determined by pre-enrollment characteristics). The second focuses on possible **reactive effects** of MLS participation (influences on the variables under study by participation in the study itself) as determined by post-enrollment characteristics.

Question 1: Were there significant differences between the MLS Representative and Black Groups and their comparison groups on specified pre-enrollment characteristics?

(These characteristics included gender, race, SAT scores, and entering academic division.)

No significant differences were found between MLS Black Group participants and non-participants. The MLS Representative Group, however, had a greater percentage of whites and a smaller percentage of minorities (other than Blacks) than did its comparison group of non-participants. This difference was not unexpected, as very few of the Asian students originally selected by MLS actually agreed to participate in the study. These racial differences did not appear to affect the other demographic characteristics examined, so it may be concluded that both the MLS Representative and Black Groups were reasonably representative of entering UMCP freshmen in the early 1980's.

Question 2: Were there significant differences between the MLS Representative and Black Groups and their comparison groups on collegiate academic and enrollment variables?

(These variables included number of official changes in declared major, GPA during the first six semesters, number of times placed on academic probation, number of academic dismissals, number of part-time semesters, and date of graduation from UMCP.)

A significantly greater percentage of MLS Representative Group participants than non-participants had been placed on academic probation one or more times (50% vs. 46%). A significantly smaller percentage of MLS Representative Group participants than non-participants had attended UMCP on a part-time basis (73% vs. 80%).

The most interesting significant results, however, related to the retention and graduation rates of students in the MLS Representative Group and the MLS Black Group. MLS participants in both groups tended to graduate from UMCP **earlier** and were **more likely to remain enrolled at UMCP** until graduation than their non-participating counterparts. Forty-eight percent of the MLS Representative Group (vs. 39% of non-participants) and 29% of the MLS Black Group (vs. 19% of non-participants) had graduated from UMCP five years following their matriculation. The implications of these findings for interpreting the *MLS Research Highlights Series* are discussed.

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Maryland Longitudinal Study Steering Committee
Division of Student Affairs
The University of Maryland College Park
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The Maryland Longitudinal Study (MLS) is a research undertaking of the Division of Student Affairs at The University of Maryland College Park. A significant number of Student Affairs staff have been involved in the study since its inception. A Steering Committee appointed by the Vice President for Student Affairs has been responsible for the methodology, data collection, and management of this project. These individuals are listed in Appendix A of the MLS report entitled "The Maryland Longitudinal Study—A Descriptive Overview: The Study's Purpose, Goals, Features, Participants, and Design."

I. INTRODUCTION

Comparisons of psychological/sociological research participants and non-participants provide two general types of information. The first concerns determination of how well the sample of study participants represents the population from which it was drawn. This representativeness in part suggests the degree to which results obtained through the study of a particular sample of subjects may be generalized to other individuals in the total population.

A second type of information to be derived from such comparisons has to do with ways the study itself may have affected the variables under examination. In other words, the processes involved in conducting research may introduce certain effects on the results obtained. These effects are called "reactive" and refer to these external environmental influences. There is a well-established body of research which supports the idea that the attention given to participants in most types of psychological and sociological research does, to a certain extent, alter attitudes and behavior. This phenomenon is commonly known as the "Hawthorne Effect."

College students who participate in research projects, particularly those of an extensive longitudinal nature such as the Maryland Longitudinal Study (MLS), may be said to benefit from an amount of institutional attention not provided to non-participating students. Prior to the beginning of MLS, a preliminary study was conducted on a pilot group of subjects in order to determine the likelihood of reactive effects from "attention-paying" to these subjects.[1] The results indicated no significant differences between four "attention-treatment" groups on several self-report items involving attitudes toward academic studies and the University of Maryland College Park (UMCP). However, statistically significant differences were obtained on a behavioral measure of cooperativeness: return of the mailed questionnaire. (Students who had more "attention" paid to them were more likely to return the questionnaire.) Because of these findings, members of the Study's Steering Committee recommended the employment of no-treatment "comparison groups" to determine possible reactive effects on the Study's participants.

The present report focuses on similarities and differences between MLS Representative Group and Black Group participants and their "comparison groups" of non-participants. Answers to two basic questions, reflecting the two types of information mentioned previously, were sought:

Question 1: Were there significant differences between the MLS Representative and Black Groups and their comparison groups on specified pre-enrollment characteristics?

The characteristics studied included gender, race, SAT scores, and entering academic division. Similarities on these characteristics would support the general representativeness of the MLS participant groups to the larger population from which they were drawn (the entering freshman class of 1980).

Question 2: Were there significant differences between the MLS Representative and Black Groups and their "comparison groups" on collegiate academic and enrollment variables?

The variables studied included number of official changes in declared major, grade point average (GPA) during the first six semesters, number of times placed on academic probation, number of academic dismissals, number of part-time semesters, and date of graduation from UMCP. Similarities on these academic and enrollment variables would indicate a lack of reactive effects on MLS participants as a result of their involvement in the study, again supporting the representativeness of the groups and the appropriateness of generalizing to the larger student body as a whole.

II. MLS METHODOLOGY

MLS BACKGROUND AND PARTICIPANTS

The MLS was a longitudinal study of over 700 individuals who matriculated at UMCP in the Fall of 1980 and from whom data were collected for the next five years, regardless of participants' subsequent enrollment status. This design included annual spring semester data gathering contact with UMCP matriculants who (a) remained enrolled at UMCP, (b) subsequently transferred to another college or university, and (c) dropped out of higher education altogether.

There were two groupings of individuals studied by the MLS: The Representative Group (N = 468) and the Black Group (N = 339). The Representative Group was a random sample of students who entered UMCP as first time freshmen in the Fall of 1980. This sample was a cross section of the larger freshman class from which it was drawn and, as such, was a representation of ethnic minorities at UMCP—including approximately 10% black students. It is important to keep in mind, therefore, that this representative sample is not a "white" sample; rather, it reflects the ethnic diversity of the student body at UMCP.

The Division of Student Affairs, which planned and carried out the longitudinal study, has a strong interest in the collegiate experiences of blacks and was concerned about the high number of black students who matriculated at UMCP and dropped out before graduating. Through the random selection process, the number of black students included as part of the Representative Group was relatively small (N = 48). Consequently, in order to provide a larger basis for generalization, all black freshmen at UMCP not included in the Representative Group were also invited to participate in the MLS. Those who agreed to participate became part of the "Black Group." The data from the 48 black students chosen as part of the Representative Group were also included in the Black Group's data for analyses.

SELECTION OF MLS COMPARISON GROUPS

Because all black students in the entering freshman class of Fall, 1980 had been invited to participate in the MLS, it was not possible to select a black "comparison group" from this population. Therefore, it was decided that all black students in the entering freshman class of Fall, 1981 (the following year, N = 446) would serve as the "comparison group" for the MLS Black Group. It was also decided that the two "comparison groups" should come from the **same population** and so a random sample (N = 199) of the entire entering freshman class of Fall, 1981 was selected to serve as the "comparison group" for the MLS Representative Group.

Some explanation needs to be provided why the term "comparison group" is being used in this report rather than the more common "control group." First, the term control group is usually reserved for experimental studies in which a limited number of variables are manipulated while others are held constant. The MLS was not an experimental study; there was no attempt to manipulate any of the variables under examination. Second, control groups are usually drawn from the identical populations as the treatment groups under study. Comparison groups for the MLS were drawn from the population of students matriculating at UMCP the year **following** the beginning of the Study.

COMPARISON VARIABLES

The number of comparisons that could be made was limited to the data available, through institutional records, for the comparison groups. Two types of variables were compared: four entering demographic characteristics and seven academic and enrollment history variables.

Entering demographic characteristics:

1. Gender (male/female)
2. Race (white/black/other minority)
3. SAT scores (verbal/math)
4. Entering academic division[2]

Academic and enrollment history variables:

1. Number of official changes in declared major
2. Grade point averages (GPAs) during the first six semesters
3. Number of times placed on academic probation
4. Number of times academically dismissed
5. Number of part-time semesters (less than 9 credit hours attempted)
6. UMCP Graduation date

III. RESULTS OF THE COMPARISONS OF MLS PARTICIPANTS AND NON-PARTICIPANTS

Question 1: Were there significant differences between the MLS Representative and Black Groups and their comparison groups on specified pre-enrollment characteristics?

THE REPRESENTATIVE GROUP

Table #1 indicates a significant difference between the MLS Representative Group and its "comparison group" on only one of the four demographic characteristics examined. While both the MLS Representative Group and its comparison group contained equal percentages of black students (10%), the MLS Representative Group included a larger percentage of white students and a smaller percentage of **other** minority students. This difference is significant at the .01 level.

This difference between the study's sample and the comparison group was not totally unexpected. Interviewers who contacted potential participants in the Spring of 1981 recall that very few of the **Asian** students originally chosen via the random selection process by MLS actually agreed to participate in the study. No significant differences were found for the other entering demographic characteristics studied: gender, SAT scores (verbal or math), or for entering academic division. Apparently, the lack of Asian student participation did not seem to affect these other demographic characteristics. Thus, with a slight shortage of Asian student representation, the MLS Representative Group participants may be said to be reasonably representative of entering UMCP freshmen in the early 1980s.

THE BLACK GROUP

Table #1 indicates that no significant differences were found between MLS participants and non-participants on the three demographic characteristics examined (gender, SAT scores, and entering academic division). Thus, MLS Black Group participants may be said to be reasonably representative of entering UMCP black freshmen in the early 1980s.

TABLE 1

DEMOGRAPHIC CHARACTERISTICS OF MARYLAND LONGITUDINAL STUDY PARTICIPANTS AND COMPARISON GROUPS

	Representative Groups		Black Groups	
	MLS (N = 468)	Comparison (N = 199)	MLS (N = 339)	Comparison (N = 446)
Sex	%	%	%	%
Male	48	54	35	40
Female	52	46	65	60
SAT Scores (Means)				
SAT-Verbal	452	450	386	386
SAT-Math	509	512	404	415
Race	%	%	%	%
White	83	73	Not Applicable	
Black	10	10		
Other Minority	7	17		
	$p < .01$			
UMCP Academic Division (Entering)	%	%	%	%
Agriculture and Life Sciences	11	13	8	9
Mathematics, Physical Sciences & Engineering	24	23	21	24
Behavioral & Social Sciences	20	24	29	23
Arts & Humanities	12	11	16	15
Human & Community Resources	10	10	16	16
Undergraduate Studies	18	16	8	10
Allied Health	5	3	3	4

Question 2: Were there significant differences between the MLS Representative and Black Groups and their comparison groups on collegiate academic and enrollment history variables?

THE REPRESENTATIVE GROUP

Table #2 (next page) reports collegiate academic and enrollment data for the MLS Representative Group and its comparison group. No significant differences were found for number of official changes in declared major, GPAs during the first six semesters, or number of times academically dismissed.

Significant differences were found, however, for the following three variables. A significantly **greater** percentage of MLS participants than non-participants had been on academic probation one or more times (50% vs. 46%), and a significantly **smaller** percentage of MLS participants than non-participants had attended UMCP on a part-time basis (73% vs. 80%). However, perhaps the most interesting result related to the significant difference in graduation dates between MLS participants and non-participants. MLS Representative Group participants tended to graduate sooner (35% vs. 27% by the end of the fourth year) and were more likely to persist at UMCP until graduation (48% vs. 39%).

THE BLACK GROUP

Table #3 (page 7) indicates only one significant difference between the MLS Black Group and its "comparison group" on academic and enrollment history variables. Like their MLS Representative Group counterparts, MLS Black Group participants tended to graduate sooner (16% vs. 13% by the end of the fourth year) and were more likely to persist at UMCP until graduation (29% vs. 19%). There were no significant differences in number of official changes in declared majors, GPA's during the first six semesters.

TABLE 2

UMCP ACADEMIC AND ENROLLMENT HISTORY DATA ON THE MARYLAND LONGITUDINAL STUDY'S REPRESENTATIVE GROUP AND ITS COMPARISON GROUP

	MLS (N = 468)	Comparison (N = 199)
Number of Changes in Declared Major	%	%
None	38	37
One	39	38
Two	18	19
Three or More	5	6
UMCP Grade Point Averages		
First Semester	2.36	2.32
Second Semester	2.37	2.31
Third Semester	2.39	2.34
Fourth Semester	2.55	2.46
Fifth Semester	2.51	2.60
Sixth Semester	2.67	2.62
Number of Times on Probation	%	%
None	50	54
One	31	34
Two	15	12
Three	4	0
Four	1	0
	$p < .05$	
Number of Times Dismissed from UMCP	%	%
None	76	79
One	21	19
Two or More	3	2
Number of Part-Time Semesters at UMCP	%	%
None	27	20
One or More	73	80
	$p < .01$	
UMCP Graduation Date	%	%
Fourth Year	32	27
Fifth Year	13	12
Sixth Year	3	0
Did Not Graduate from UMCP (as of Spring 1988)	52	61
	$p < .05$	

TABLE 3

UMCP ACADEMIC AND ENROLLMENT HISTORY DATA ON THE MARYLAND LONGITUDINAL STUDY'S BLACK GROUP AND ITS COMPARISON GROUP

	MLS (N = 339)	Comparison (N = 446)
Number of Changes in Declared Major	%	%
None	49	51
One	33	32
Two	12	10
Three or More	6	7
UMCP Grade Point Averages		
First Semester	1.74	1.79
Second Semester	1.84	1.94
Third Semester	2.04	2.02
Fourth Semester	2.10	2.19
Fifth Semester	2.11	2.08
Sixth Semester	2.18	2.21
Number of Times on Probation	%	%
None	23	30
One	48	48
Two	19	17
Three	9	5
Four	1	1
Number of Times Dismissed from UMCP	%	%
None	59	62
One	35	33
Two or More	5	5
Number of Part-Time Semesters at UMCP	%	%
None	15	14
One or More	85	86
UMCP Graduation Date	%	%
Fourth Year	16	13
Fifth Year	10	6
Sixth Year	3	0
Did Not Graduate from UMCP (as of Spring 1988)	71	81
	$p < .001$	

IV. CONCLUSIONS AND IMPLICATIONS

Unlike previous *MLS Research Highlights* whose general purpose was to provide the University community with new data-driven information about students and their experience at College Park, the purpose of this report is to establish the degree of confidence that previous reports say something of value about the **larger UMCP student body of the early 80's—**not just the MLS samples. As the number of MLS reports has grown, the importance of providing a "methodological check" that would temper or reaffirm the generability of MLS samples to the larger student body has increased. Thus the findings of this report should be read in conjunction with previous (and future) MLS research reports.[3]

In terms of pre-enrollment characteristics, the only significant difference found for either the Black or Representative Groups was the decreased number of Asian students in the Representative Group. Given this difference, how might MLS results be affected? Popular opinion may suggest that Asian students are exceptionally *good* students and may favor enrollment in the sciences. Had there been a slightly higher percentage of Asian students in the MLS Representative Group, the average GPA or enrollment in scientific majors might have been increased. While our data did *not* show a difference in entering academic division between the MLS Representative Group and its comparison group, some differences were found in a slightly higher percentage of MLS participants attending the University on a part-time basis, and being put on academic probation. Thus, as reflected in these academic indices, the MLS Representative Group may have suffered by losing some of the more academically able Asian students. However, using *graduation rate* as the criterion, the lack of Asian students did not appear to significantly depress the eventual number of college graduates in the MLS Representative Group (which was significantly higher than the comparison group).

Given the similarities on pre-enrollment and enrollment history variables between the MLS Groups and their comparisons, what sense can be made of the differing graduation rates? The argument can be made that participation in MLS—with attention from faculty and staff, in the form of a yearly person-to-person interview, may have had a positive impact on students and influenced their persistence at UMCP. If true, this finding would not be inconsistent with previous psychological research (the Hawthorne Effect) and perhaps of more direct interest to the campus community, it would be consistent with the recommendations outlined in the recent report prepared by the College Park Campus Senate Ad Hoc Committee on Undergraduate Education, chaired by John Pease—*Promises to Keep: The College Park Plan for Undergraduate Education*. While contact with faculty and staff vis-a-vis the MLS interview did not make a difference in academic achievement variables such as grade point average, this contact may have provided an important but less tangible *support* for students. As noted in the Pease report, establishing even a modest point of identification with a faculty or staff person may make the difference in staying at UMCP or not for some students.

In conclusion, while practically no significant differences were found between MLS participants and their comparisons on pre-enrollment or academic history variables, the difference in graduation rates between the groups may suggest that MLS participants present a slightly **positively biased** picture of their college experience than would be true of the entire college population. **Thus the findings and conclusions of the *MLS Research Highlights Series* should be read from this perspective.**

END NOTES

1. See the unpublished report, "Do Incentives Introduce Reactive Effects Into the Systematic Study of Student Development?" Longitudinal Study Steering Committee, Division of Student Affairs, 2108 Mitchell Building, University of Maryland.

2. At the time of the study, UMCP organizational structure was based on the provostial system which included five academic divisions rather than the present structure of 14 colleges and professional schools. Students were enrolled in one of the following seven units, from which MLS classifications were drawn:

   1. Division of Agriculture and Life Sciences
   2. Division of Mathematics, Physical Sciences, and Engineering
   3. Division of Behavioral and Social Sciences
   4. Division of Arts and Humanities
   5. Division of Human and Community Resources
   6. Undergraduate Studies Program
   7. Allied Health Program

3. To obtain a copy of other *MLS Research Highlights*, write:

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